

**What is claimed is:**

1) **A contact activated vacuum assisted suction cup assembly comprising:**

1) **a cylindrical bellowed or corrugated cup defining a plurality of interconnected bellows or corrugations of alternating, coaxial large and small diameter areas, said bellowed cup having;**

**A) an open contact end; and**

**B) a valve end including a valve seat;**

2) **a valve stem having first and second extremities;**

10 **3) a valve plate intermediate said open contact end and said valve end in one of said large diameter areas attached to said first extremity; and**

**4) a valve stop attached to said valve stem at said second extremity said valve stop being of a size to engage said**

**valve seat.**

15 **2) The contact activated vacuum assisted suction cup assembly of claim 1 wherein said valve plate includes apertures therein for the passage of a vacuum.**

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**3) The contact activated vacuum assisted suction cup assembly of claim 2 wherein said valve stop includes a central threaded aperture, said valve stem is threaded and said valve stop is threaded onto said valve stem.**

4) **The contact activated vacuum assisted suction cup assembly of claim 2  
wherein said valve end includes a peripheral flange about said valve end.**

5       5) **The contact activated vacuum assisted suction cup assembly of claim 4  
wherein said peripheral flange is integral with said valve end.**

6) **A picking device comprising:**

- A) **a vacuum plenum fed by a vacuum inlet;**
- B) **a plurality of plenum apertures in said vacuum plenum; and**
- C) **in said plenum apertures, contact activated vacuum assisted  
suction cup assemblies comprising:**
  - i) **a cylindrical bellowed or corrugated cup defining a plurality  
of interconnected bellows or corrugations of alternating,  
coaxial large and small diameter areas, said bellowed cup  
comprising;**
    - A) **an open contact end; and**
    - B) **a valve end including a valve seat and a peripheral  
flange for engagement with said plenum apertures;**
  - ii) **a valve stem having first and second extremities;**
  - iii) **a valve plate intermediate said open contact end and  
said valve end in one of said large diameter areas  
attached to said first extremity; and**

iv) a valve stop attached to said valve stem at said second extremity said valve stop being of a size to engage said valve seat.

5 7) The picking device of claim 6 wherein said valve plate includes apertures therein for the passage of a vacuum.

8) The picking device of claim 7 wherein said valve stop includes a central threaded aperture, said valve stem is threaded and said valve stop is  
10 threaded onto said valve stem.

9) The contact activated vacuum assisted suction cup assembly of claim 4 wherein said peripheral flange is integral with said valve end.

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